REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for the courtesies extended during the interview of January 25, 2007.

Disposition of Claims

Claims 1, 3-6, and 8-9 are pending in the present application. Claims 1, 5, and 6 are independent. The remaining claims depend, directly or indirectly, from claims 1 and 6.

Claim Amendments

Claims 1, 3-6, and 8-9 have been amended to correct informalities and clarify the subject matter of the claims. No new matter has been added by these amendments.

Objections to the Drawings

The drawings were objected to for failing to show every feature of the invention specified in the claims. Specifically, the Examiner asserts that "jump signal applying means, timing setting means, level determining means, and level varying means" as recited in the claims are not shown. By way of this reply, "jump signal applying means, timing setting means, level determining means, and level varying means" in the claims are deleted or amended so that every feature of the invention specified in the claims are shown in the drawings.

Specifically, Applicant respectfully notes that a "servo controller" recited in the amended claims is at least shown in Figure 1 as servo processor 31 and that a "processor" recited in the amended claims is at least shown in Figure 2 as CPU 41, in accordance with one or more embodiments of the claimed invention.

Accordingly, withdrawal of this objection is respectfully requested.

Rejections under 35 U.S.C. § 112

Claims 1-9 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification, and under 35 U.S.C. § 112, second paragraph, as being indefinite. This rejection is moot with respect to claims 2 and 7, which have been canceled. For the following reasons, this rejection is respectfully traversed.

By way of this reply, claims 1, 3-6, and 8-9 have been amended to clarify the language and to be supported by the disclosure. Specifically, claims 1 and 5, as amended, recite "a servo controller configured to apply a drive signal having an acceleration pulse or a deceleration pulse to a driver" and "a driver configured to drive the light emitting device in accordance with the drive signal applied from the servo controller." Applicant respectfully notes that paragraph [0061] clearly discloses that servo processor 31 generates and outputs focus drive signal FD to two-function driver 18, and two-function driver 18 receives focus drive signal FD and drives two-function mechanism 3 of optical pickup 1. In addition, paragraph [0063] discloses that emission of a laser beam of LD4 of optical pickup 1 is driven by LD driver 20, and servo processor 31 generates a laser drive signal to execute laser beam emission of optical pickup 1. Further, in the Specification, acceleration pulse PL1 and deceleration pulse PL2 are described in sufficient detail to enable one skilled in the art to make and use the claimed invention (*see e.g.*, paragraphs [0069], [0070], [0075], and [0076], and Figure 5 of the published Specification).

The Examiner also asserts that the specification "does not explain what these signals are and how focus jump is related to a drive signal for controlling light emitting means."

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Paragraph [0011] defines that a "focus jump" is an action " to move the focal point of a laser beam from a state were a laser beam from optical pickup 1 is focused in recording layer 102 (or recording layer 104) to recording layer 104 (or recording layer 102) during reproduction." To carry out a focus jump in accordance with one embodiment of the claimed invention, as explained above with reference to paragraph [0061], servo processor 31 applies focus drive signal FD to two-function driver 18, and two-function driver 18 drives optical pickup 1.

With respect to the claim language the Examiner has indicated as unclear and confusing such as the jump signal applying means, a brake signal, and the timing setting means, Applicant has amended the claims to recite clearly the subject matter of the claims. Specifically, claims 1 and 5, as amended, recite a processor configured to determine whether a level of the focus error signal reaches a predetermined value and to lower the predetermined value in the case where the level of the focus error signal does not reach the predetermined value. Figures 4, 5, and 9 and paragraphs [0066]-[0076] of the published application describe in sufficient detail how to determine and vary the value.

In view of the above, withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C § 102

Claims 1-9 stand rejected under 35 U.S.C § 102(b) as being anticipated by U.S. Patent No. 6,061,310 issued to Iida (hereinafter "Iida"). This rejection is moot with respect to claims 2 and 7, which have been canceled. Claims 1, 3-6, and 8-9 have been amended. To the extent that this rejection may still apply to the amended claims, this rejection is respectfully traversed.

Embodiments of the present invention are directed to a method and apparatus for optimizing a focus jump by determining and varying a specification value. As discussed above, a focus jump is an action to move the focal point of a laser beam from one recording layer to another recording layer in a multilayer optical disk. In one embodiment of the claimed invention, when such a focus jump is carried out, the timing of applying or completing a drive signal (i.e., an acceleration pulse or a deceleration pulse) may be determined, based on when focus error signal FE reaches a predetermined value (e.g., acceleration completion level ACL or deceleration commencement level DCL). However, such predetermined values need to be adjusted according to variations of focus error signal FE because focus error signal FE may not be consistent due to variations in light transmittance and intervals in a multilayer disk (*see e.g.*, Figure 10 and paragraphs [0019] and [0026] in the published Specification). In order to adjust the value in accordance with variations of focus error signal FE, the value may be changed in case that the value is not reached by the focus error signal FE within a certain time (*see e.g.*, Figures 4 and 5 in publication of the Specification).

Accordingly, independent claims 1 and 5, as amended, require, in part, to *lower* the predetermined value in the case where the level of the focus error signal does not reach the predetermined value. In addition, independent claim 6, as amended, require, in part, *lowering* the predetermined value in the case where it is determined in the level determining step that the level of the focus error signal does not reach the predetermined value.

Iida is directed to a method and apparatus for controlling a focus jump. Iida discloses means and steps for detecting the velocity of an objective lens from the waveform of a focusing error signal at a predetermined time and for closing a focusing servo loop at a time in accordance with the velocity of the objective lens.

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In Iida, the system controller 10 turns off the brake signal and closes the focusing servo loop earlier than in the normal mode when the velocity of the objective lens moving in a jumping-up direction is lower than a proper value (i.e., the forcibly-closed loop mode is carried out when T>LM1 in Figure 8). In addition, the system controller 10 further applies a brake signal when the velocity of the objective lens is not decelerated sufficiently (i.e., the increased brake signal mode is carried out when T<LM2 in Figure 9).

However, in contrast to the claimed invention, Iida fails to disclose *lowering* the predetermined value in the case where the level of the focus error signal does not reach the predetermined value. Iida merely discloses how to perform the forcibly-closed loop mode and the increased brake signal mode as discussed above.

In fact, Iida does not contemplate the case where a focus error signal *does not reach* a predetermined value for the second recording layer, and thus clearly fails to show or suggest *lowering* the value in such a case. This can be understood more clearly by referring to Figure 7 in Iida. In Figure 7a of Iida, the two broken lines in parallel with the time axis represent threshold levels. The broken line over the time axis corresponds to L3 of Figure 7e and the other broken line under the time axis corresponds to L1 of Figure 7e. In Figure 7a, it is noted that the curves of FE meet either one of the two broken lines and, as a result, FCMP-H (or L) signals are generated. Even if Figs. 8-12 do not show broken lines as in Figure 7, it is clear to one of ordinary skill in the art that Iida does not contemplate the case where a focus error signal *does not reach* a specification value. Fig. 10 of the present application, which shows the case where focus error signal FE *does not reach* the specification level, and Fig. 5 of the present application, which shows the case where the specification is *lowered*, clearly supports the

Applicant's assertion that the above limitations are not shown or suggested by Iida, when compared with the figures of Iida.

In view of the above, Iida fails to show or suggest all the limitations of independent claims 1, 5, and 6, as amended. Thus, independent claims 1, 5, and 6 are patentable over Iida, at least for the above reasons. Dependent claims are also patentable for at least the same reasons as the claims from which they depend. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 04536/019001).

Dated: Respectfully submitted,
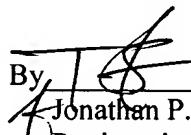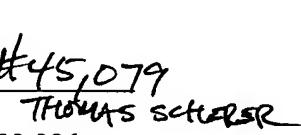
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Attachments